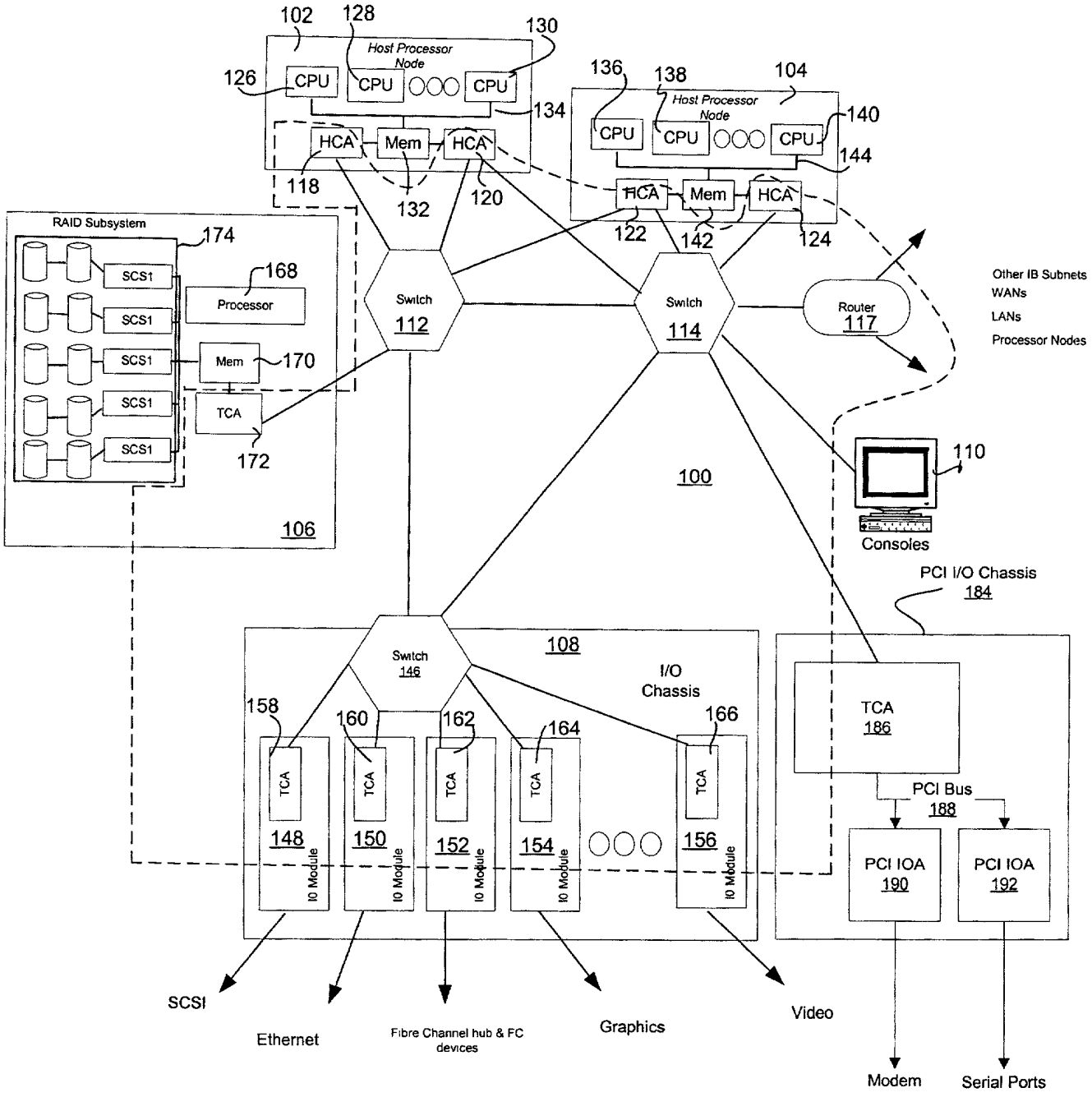
Figure 1


102
128
130
Host Processor Node
126
CPU
CPU
CPU
134
HCA
Mem
HCA
118
132
120
136
138
104
Host Processor Node
CPU
CPU
CPU
140
144
HCA
Mem
HCA
122
142
124
RAID Subsystem
174
SCSI
SCSI
SCSI
SCSI
SCSI
168
Processor
Mem
170
TCA
172
106
Switch
112
Switch
114
Router
117
Other IB Subnets
WANs
LANs
Processor Nodes
100
110
Consoles
PCI I/O Chassis
184
108
Switch
146
I/O
Chassis
158
160
162
164
166
TCA
TCA
TCA
TCA
TCA
148
150
152
154
156
IO Module
IO Module
IO Module
IO Module
IO Module
TCA
186
PCI Bus
188
PCI IOA
190
PCI IOA
192
SCSI
Ethernet
Fibre Channel hub & FC devices
Graphics
Video
Modem
Serial Ports

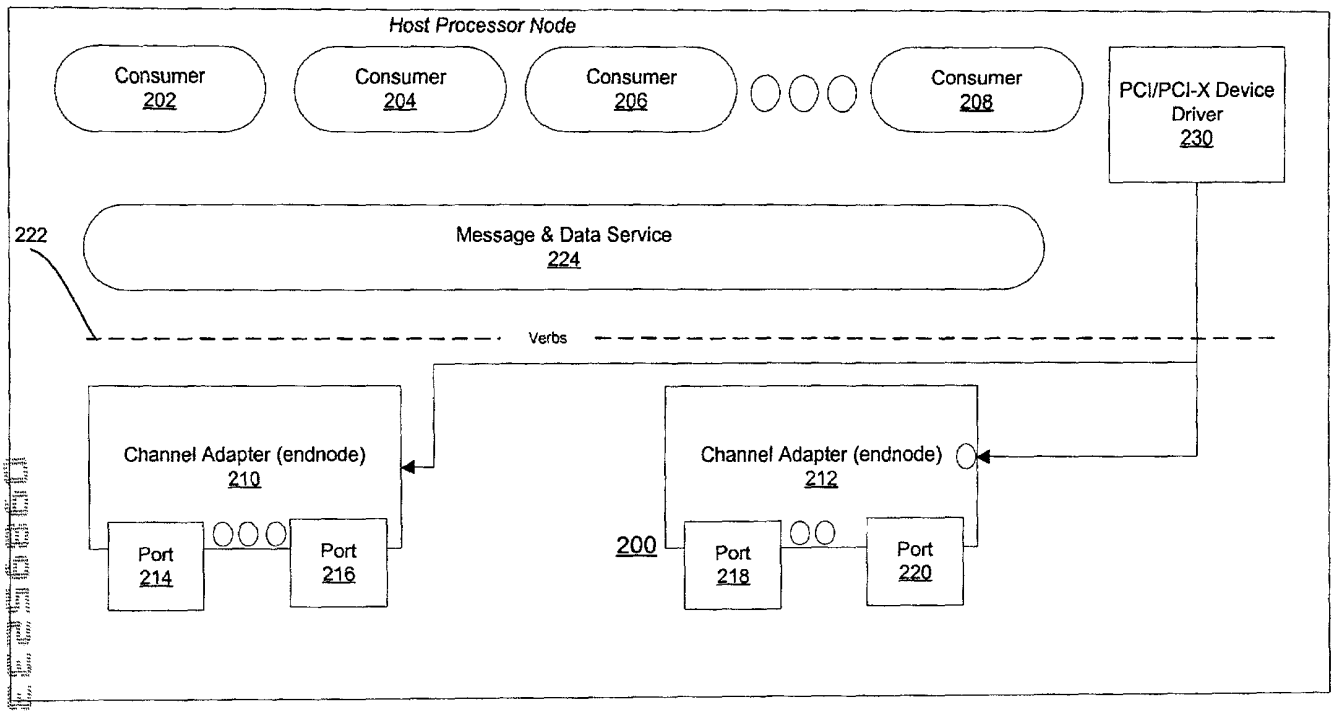


Figure 2

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AUS920010492US1
End Node Partitioning Using Local Identifiers
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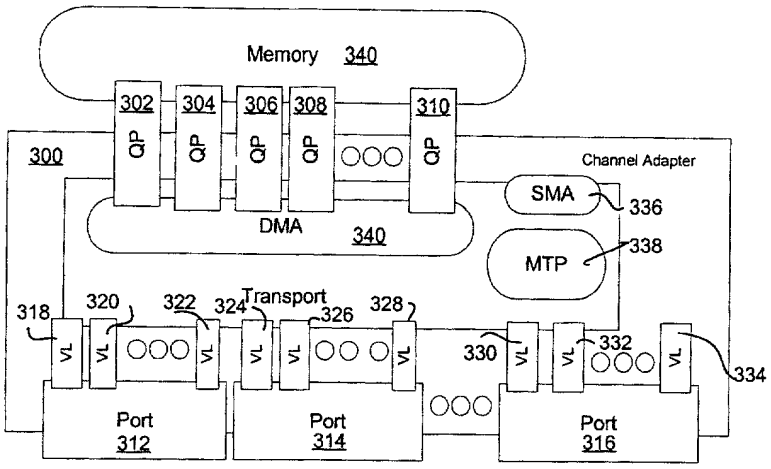

Figure 3

Craddock et al
AUS920010492US1
End Node Partitioning Using Local Identifiers
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Figure 4

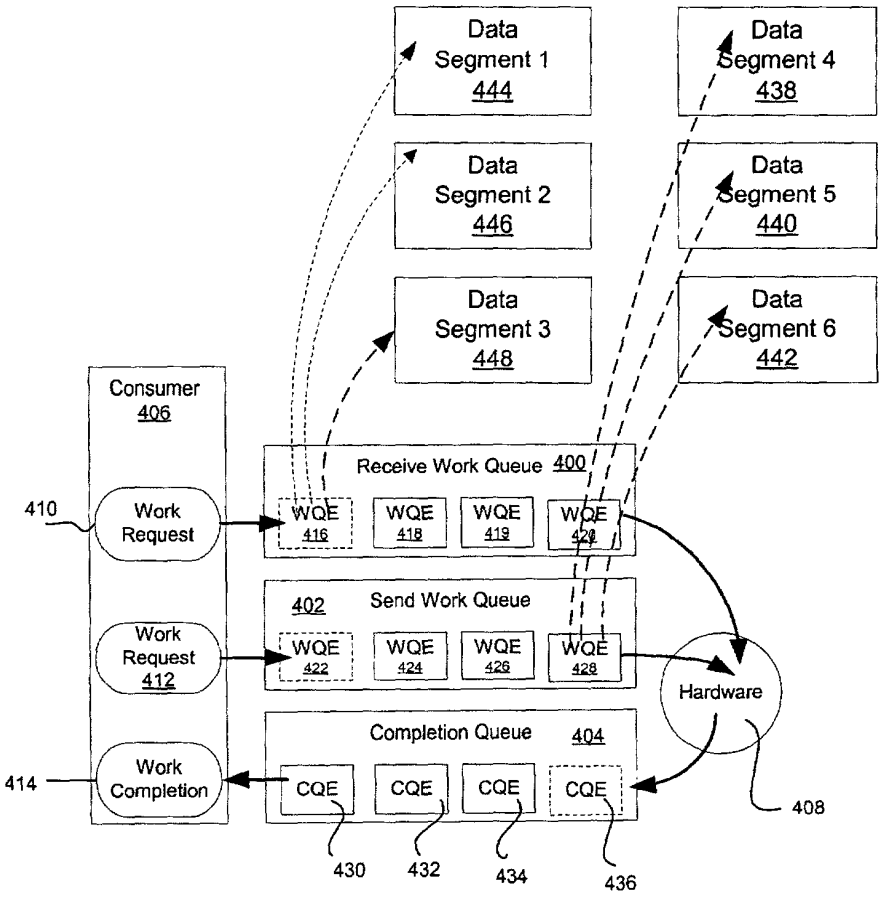

Data Segment 1 444
Data Segment 2 446
Data Segment 3 448
Data Segment 4 438
Data Segment 5 440
Data Segment 6 442
Consumer 406
Receive Work Queue 400
WQE 416
WQE 418
WQE 419
WQE 420
410
Work Request
402
Send Work Queue
WQE 422
WQE 424
WQE 426
WQE 428
Work Request 412
Hardware
Completion Queue 404
CQE
CQE
CQE
CQE
414
Work Completion
408
430
432
434
436

Figure 5

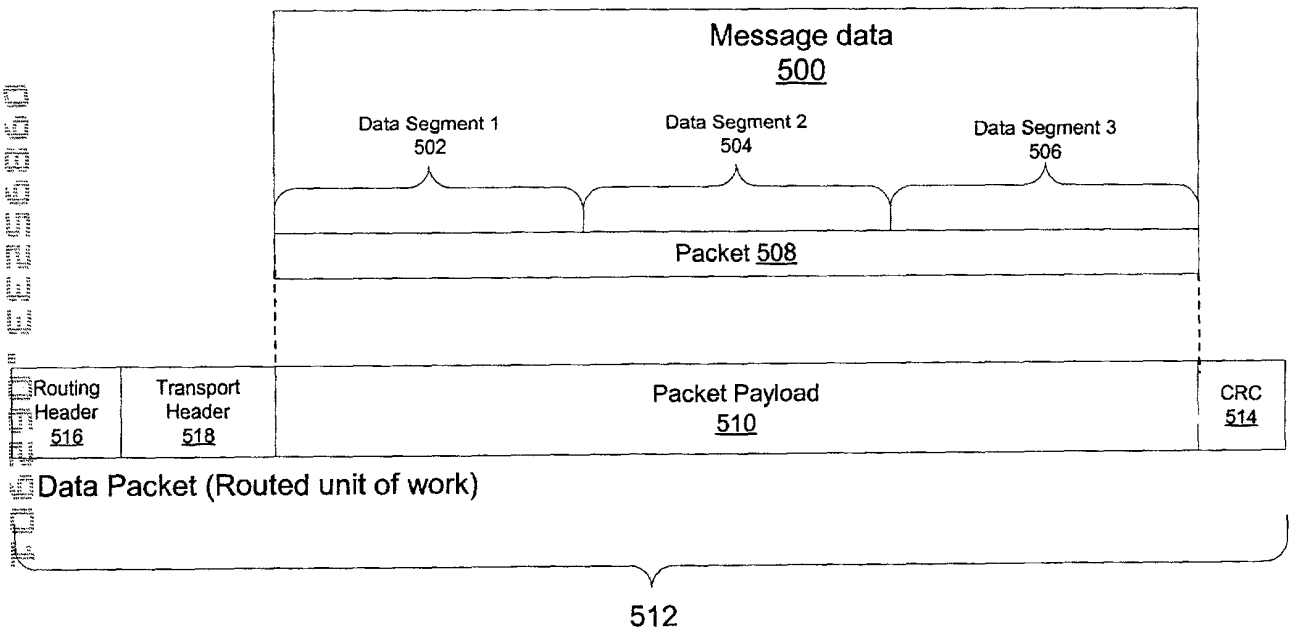

Message data
500
Data Segment 1
502
Data Segment 2
504
Data Segment 3
506
Packet 508
Routing Header 516
Transport Header 518
Packet Payload 510
CRC 514
Data Packet (Routed unit of work)
512

Figure 6

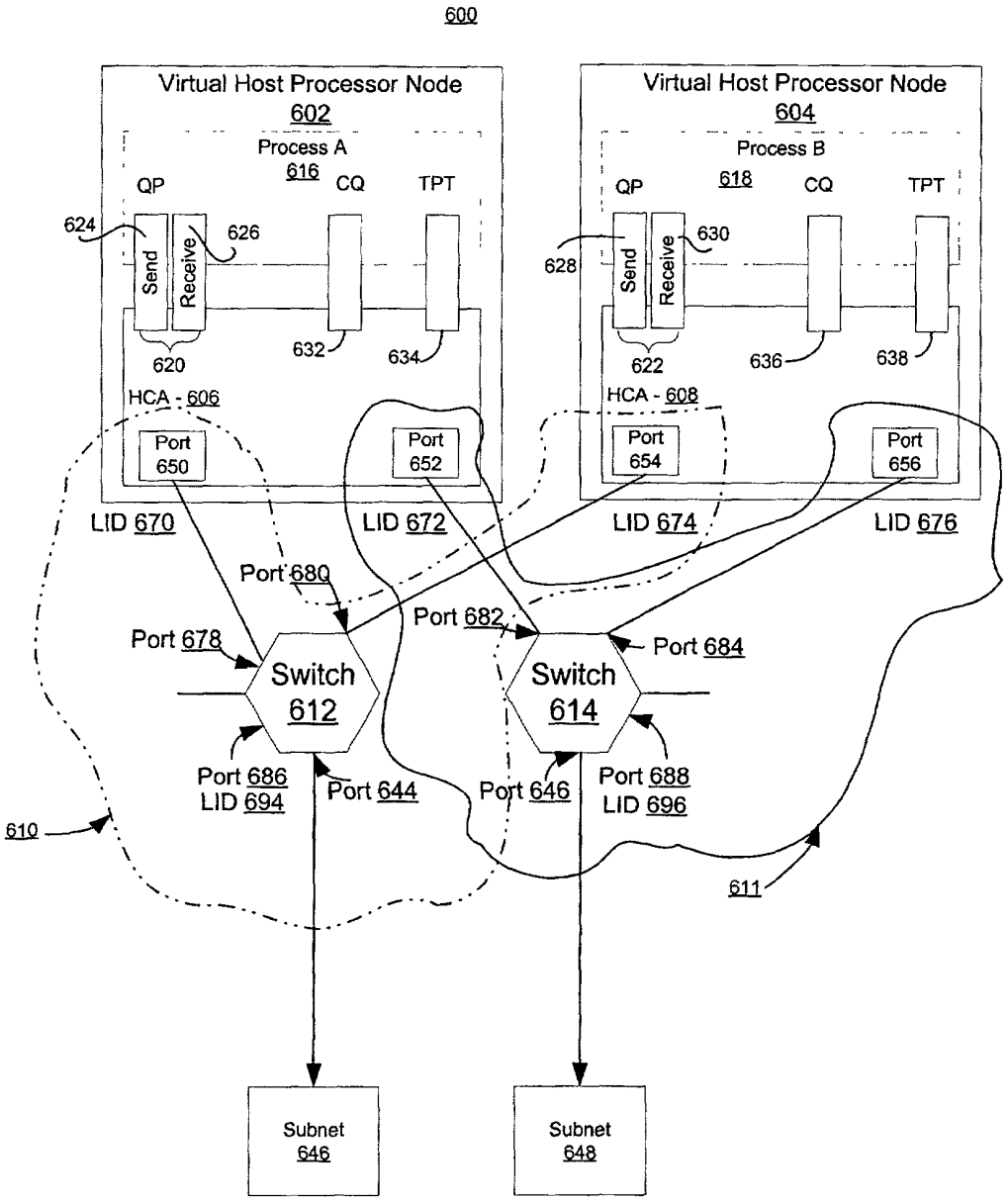

600
Virtual Host Processor Node
602
Process A
616
QP
CQ
TPT
624
Send
Receive
626
620
632
634
HCA - 606
Port 650
Port 652
LID 670
LID 672
Virtual Host Processor Node
604
Process B
618
QP
CQ
TPT
628
Send
Receive
630
622
636
638
HCA - 608
Port 654
Port 656
LID 674
LID 676
Port 680
Port 682
Port 678
Port 684
Switch 612
Switch 614
Port 686
LID 694
Port 644
Port 646
Port 688
LID 696
610
611
Subnet 646
Subnet 648

Figure 7

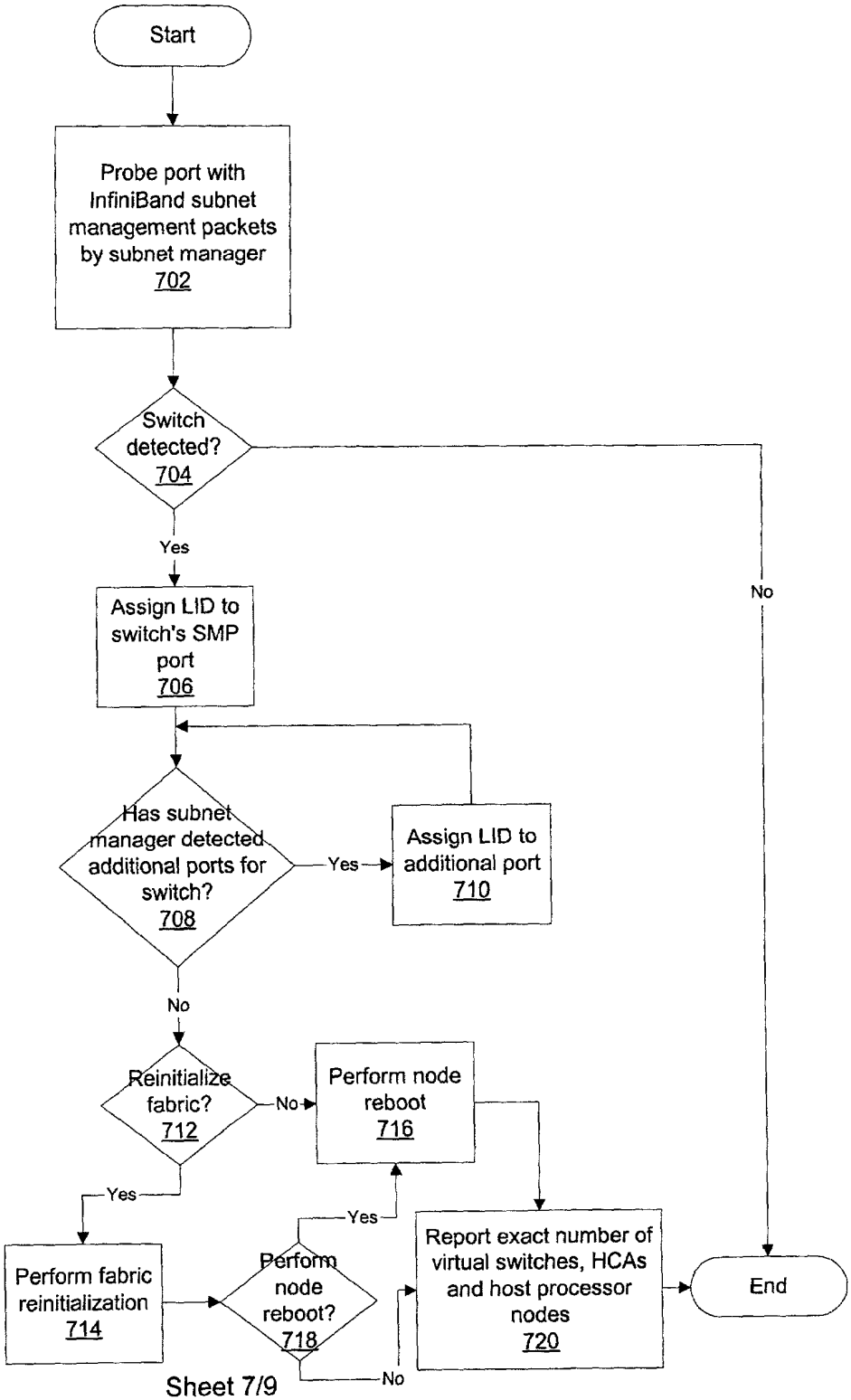

Start
Probe port with InfiniBand subnet management packets by subnet manager 702
Switch detected? 704
Yes
No
Assign LID to switch's SMP port 706
Has subnet manager detected additional ports for switch? 708
Yes
Assign LID to additional port 710
No
Reinitialize fabric? 712
No
Perform node reboot 716
Yes
Perform fabric reinitialization 714
Perform node reboot? 718
Yes
No
Report exact number of virtual switches, HCAs and host processor nodes 720
End

Figure 8

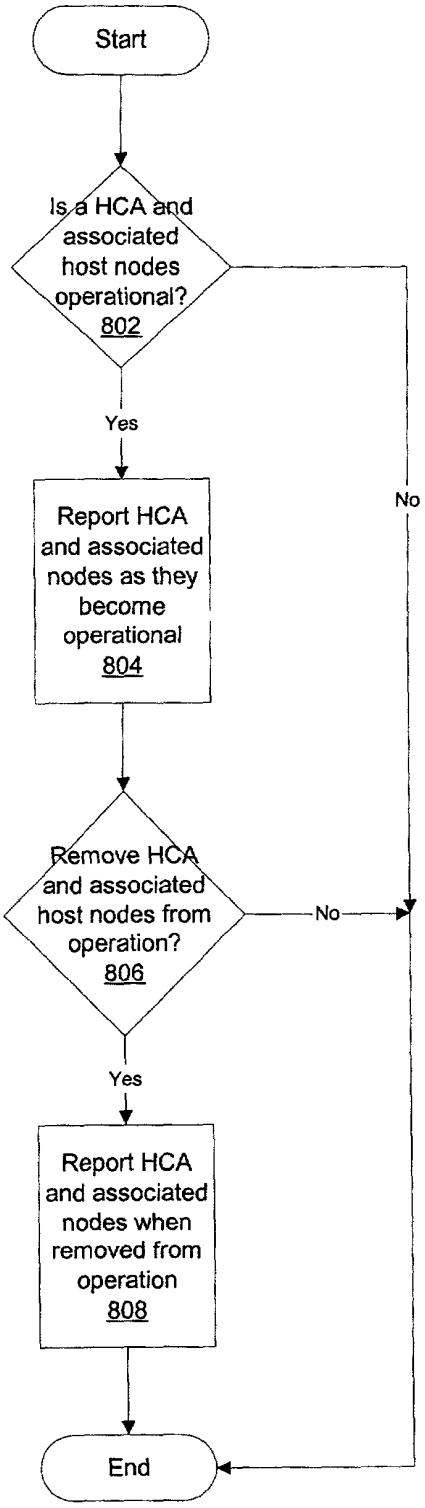
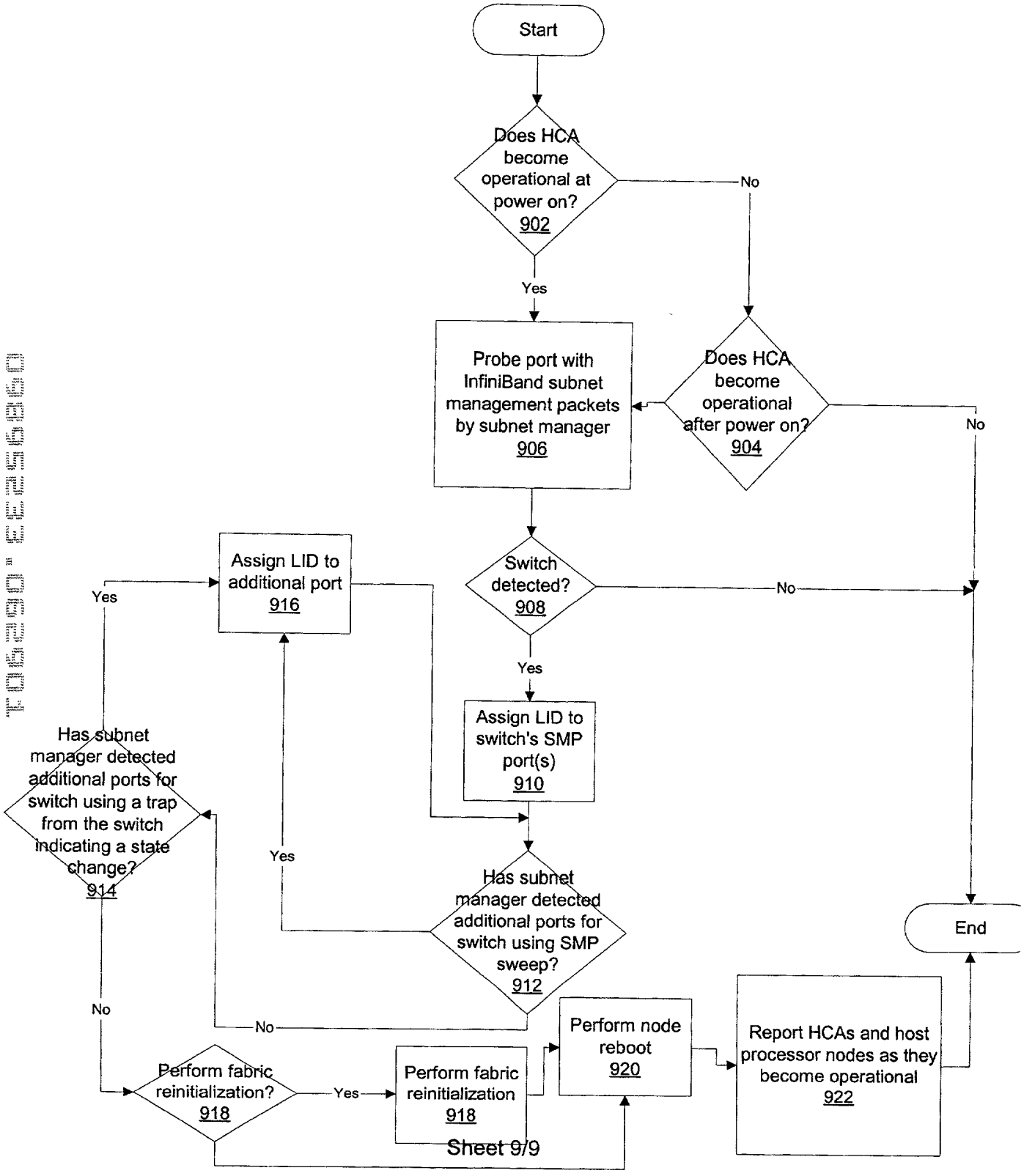

Start
Is a HCA and associated host nodes operational? 802
Yes
No
Report HCA and associated nodes as they become operational 804
Remove HCA and associated host nodes from operation? 806
No
Yes
Report HCA and associated nodes when removed from operation 808
End

Figure 9


Start
Does HCA become operational at power on? 902
No
Yes
Probe port with InfiniBand subnet management packets by subnet manager 906
Does HCA become operational after power on? 904
No
Assign LID to additional port 916
Switch detected? 908
No
Yes
Yes
Assign LID to switch's SMP port(s) 910
Has subnet manager detected additional ports for switch using a trap from the switch indicating a state change? 914
Yes
Has subnet manager detected additional ports for switch using SMP sweep? 912
End
No
No
Perform node reboot 920
Report HCAs and host processor nodes as they become operational 922
Perform fabric reinitialization? 918
Yes
Perform fabric reinitialization 918